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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

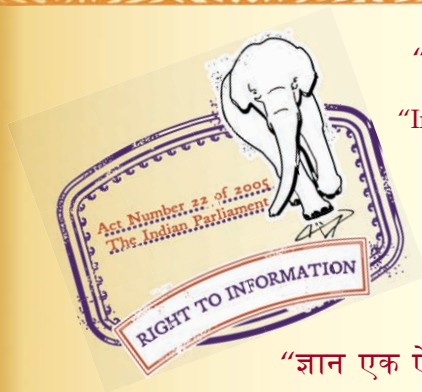
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 4040 (1998): Fasteners - Solid Drilled Tubular and Semi-Tubular Rivets [PGD 31: Bolts, Nuts and Fasteners Accessories]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
बंधक सामग्री — ठोस ड्रिल किये नलिकाकार
और अर्द्ध-नलिकाकार रिबेट — विशिष्टि
(पहला पुनरीक्षण)

Indian Standard
FASTENERS — SOLID DRILLED TUBULAR AND
SEMI-TUBULAR RIVETS — SPECIFICATION
(*First Revision*)

ICS 21.060.40

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Bolts, Nuts and Fasteners Accessories Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This standard was first published in 1967. In the present revision, following modifications have been made:

- a) Shank diameter and the diameter range of semi-tubular rivets have been aligned with ISO 1051.
- b) Method of representation of tolerances for form and position has been updated.
- c) Reference to IS 10102 has been made for various requirements relating to Technical Supply Conditions of Rivets.
- d) Semi-tubular rivets with taper holes have been deleted.

In this revision, considerable assistance has been derived from BS 4895 : 1981 'Specification for semi-tubular rivets for general purposes' issued by the British Standards Institution (BSI).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

AMENDMENT NO. 1 MARCH 2002
TO
IS 4040 : 1998 FASTENERS — SOLID DRILLED
TUBULAR AND SEMI-TUBULAR RIVETS —
SPECIFICATION

(*First Revision*)

(*Page 4, Table 2, Minimum value of d_k for Oval head for Nominal size 2 mm*) — Substitute '3.75' for '4.75'.

(BP 33)

Reprography Unit, BIS, New Delhi, India

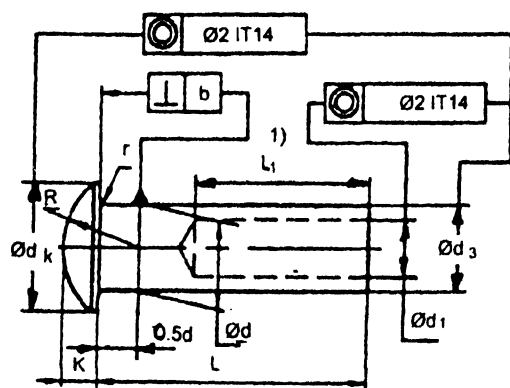
AMENDMENT NO. 2 DECEMBER 2002
TO
IS 4040 : 1998 FASTENERS — SOLID DRILLED TUBULAR AND SEMI-TUBULAR
RIVETS — SPECIFICATION

(First Revision)

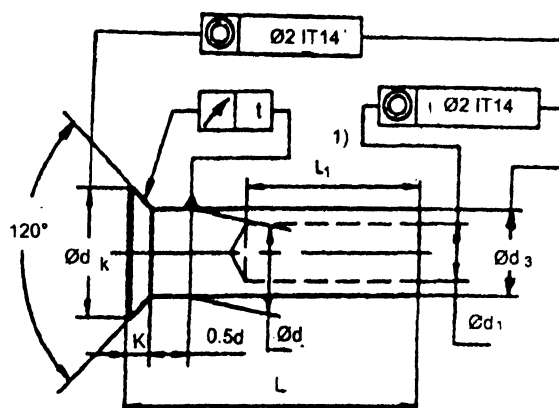
(Page 3, Table 1, Figure) — Substitute the following for the existing figure:

Table 1 Dimensions of Solid Drilled Tubular Rivets

(Clause 4.1)



OVAL HEAD



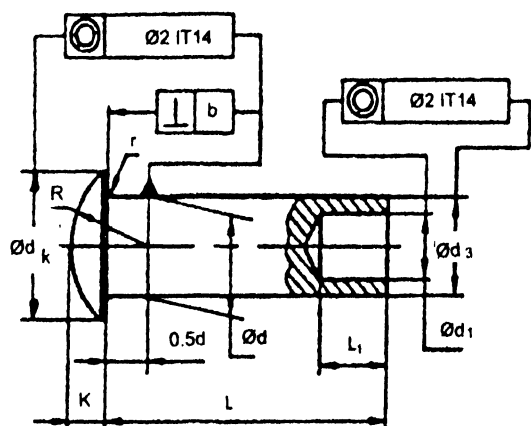
$t = 2 \text{ IT14 FOR } d \leq 8$

120° COUNTER SUNK HEAD

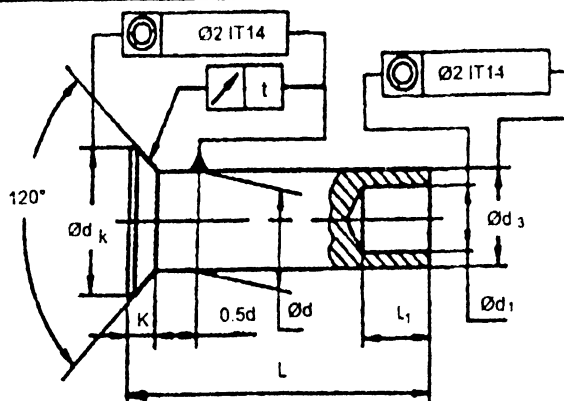
(Page 4, Table 2, Figure) — Substitute the following for the existing figure:

Table 2 Dimensions of Semi-Tubular Rivets

(Clause 4.2)



OVAL HEAD



$t = 2 \text{ IT14 FOR } d < 8$

120° COUNTER SUNK HEAD

*Indian Standard***FASTENERS — SOLID DRILLED TUBULAR AND
SEMI-TUBULAR RIVETS — SPECIFICATION***(First Revision)***1 SCOPE**

This standard covers the requirements of solid drilled tubular and semi-tubular rivets in the diameter range from 2 to 8 mm, intended for general engineering purposes.

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
320 : 1980	High tensile brass rods and sections (other than forging stock) (<i>second revision</i>)
740 : 1977	Wrought aluminium and aluminium alloy rivet stock for general engineering purposes (<i>second revision</i>)
1570 (Part 2/ Sec 1) : 1979	Schedules for wrought steels: Part 2 Carbon steels (unalloyed steels), Section 1 Wrought products (other than wire) with specified chemical composition and related properties (<i>first revision</i>)
10102 : 1982	Technical supply conditions for rivets

3 MATERIAL**3.1 Steel Rivets**

Material of steel rivets shall conform to 15C4 of Schedule II of IS 1570 (Part 2/Sec 1). The sulphur and phosphorus in the steel shall not exceed 0.05 percent each. Rivets made from steel may be electroplated.

3.2 Aluminium Rivets

Aluminium rivets shall be made from aluminium rivet stock conforming to IS 740.

3.3 Brass Rivets

The material for brass rivets shall conform to IS 320.

4 DIMENSIONS

4.1 The dimensions of solid drilled tubular rivets shall be as given in Table 1.

4.1.1 The holes in the rivets are drilled up to the head or for length of 12 mm whichever is less.

4.2 The dimensions of semi-tubular rivets shall be as given in Table 2.

4.3 The preferred diameter — length combinations are given in Table 3.

5 ACCEPTANCE TESTS

The sampling and acceptance criteria shall be in accordance with IS 10102.

5.1 Test for Material

The material used in the manufacture of rivets shall conform with requirements specified in the relevant material specification as indicated at 3.

5.2 Heat Treatment

The cold drawn rivets shall be annealed. The hardness of the rivets after annealing shall be 85 to 140 HV 10.

6 GENERAL REQUIREMENTS

6.1 The general requirements for the supply of rivets and their workmanship shall be in accordance with IS 10102.

6.2 Limits of surface cracks on rivets shall be in accordance with IS 10102.

IS 4040 : 1998

7 DESIGNATION

7.1 Rivets conforming to this standard shall be designated by type of head, nominal diameter, length, material and No. of this Indian Standard.

Example :

An oval head solid drilled tubular rivet of nominal size 4 mm, length 12 mm and conforming to this standard and made from steel shall be designated as:

Oval Head Tubular Rivet 4 × 12 IS 4040 Steel

7.2 Rivets of other types shall be designated in similar manner.

8 MARKING

8.1 All rivets over 5 mm diameter shall be marked with the manufacturer's trade mark on the head in raised figure. In addition, material shall be marked with raised letter on the head.

8.2 BIS Certification Marking

The product conforming to this standard may also be marked with the Standard Mark. Wherever it is not possible to put the Standard Mark on the product, it may be marked on the packaging.

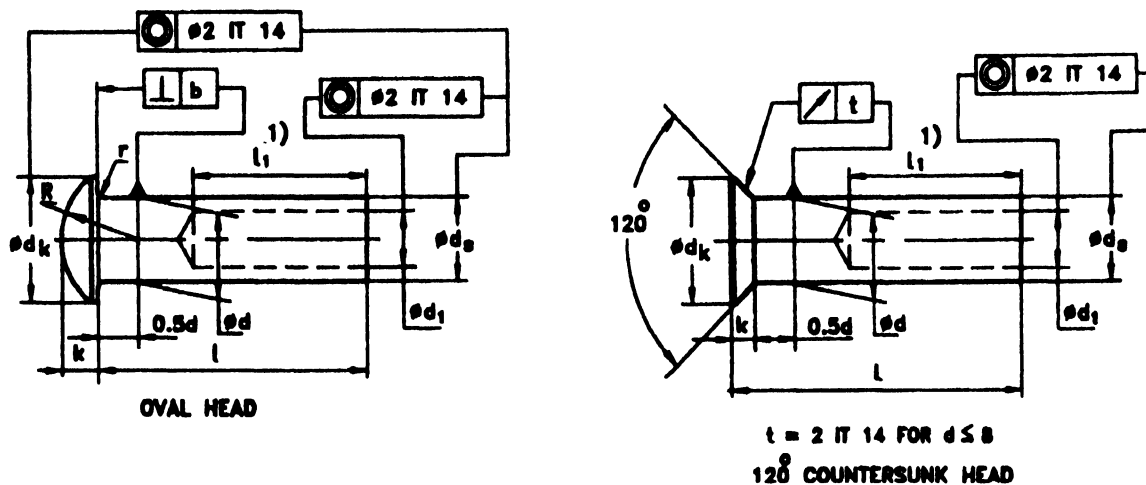
8.2.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9 PACKING AND MODE OF DELIVERY

9.1 Depending on sizes, rivets shall be packed in numbers of 100, 500 and 1 000 in high density polyethylene covers. These covers shall be packed in cardboard boxes. The cardboard boxes shall then be finally packed in wooden boxes.

9.2 Rivets shall be delivered in accordance with the provision made in IS 10102.

Table 1 Dimensions of Solid Drilled Tubular Rivets
(Clause 4.1)

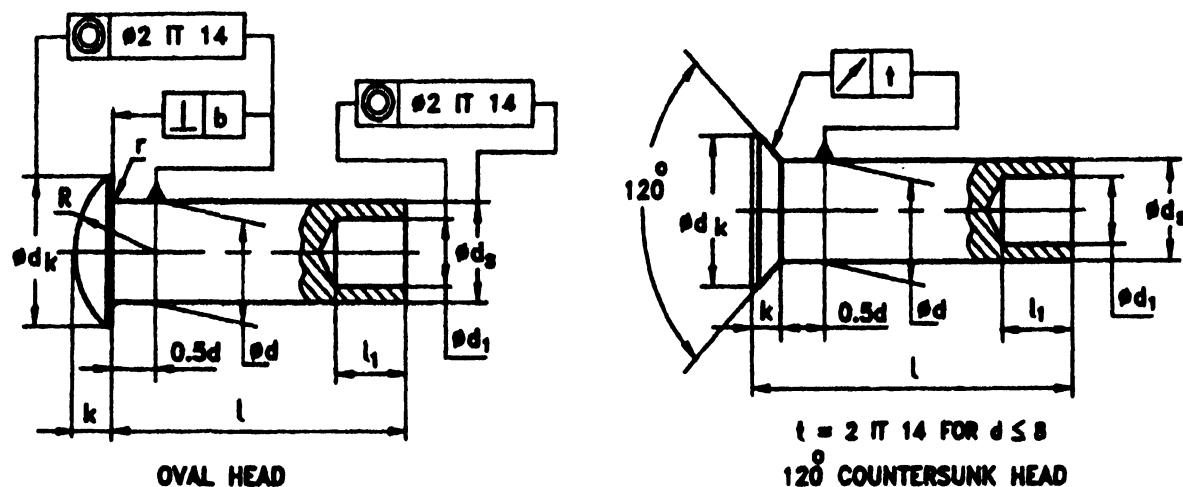


All dimensions are in millimetres.

Nominal Sizes		2	2.5	3	(3.5)	4	(4.5)	5	(5.5)	6	8
d	Max	2.10	2.60	3.10	3.60	4.10	4.60	5.15	5.65	6.15	8.15
	Min	1.90	2.55	2.90	3.40	3.90	4.40	4.85	5.35	5.85	7.85
d_s	Min	1.87	2.37	2.87	3.37	3.87	4.37	4.82	5.32	5.82	7.76
d_k	Oval Head	Max	4.25	5.25	6.25	7.25	8.25	9.30	9.80	10.30	14.30
		Min	3.75	4.75	5.74	6.75	7.75	8.70	9.20	9.70	13.70
	Countersunk Head	Max	4.00	5.00	6.00	7.00	8.00	9.00	9.50	10.00	14.00
		Min	3.75	4.75	5.75	6.52	7.52	8.52	9.02	9.52	13.52
k	Oval Head	Max	0.8	0.9	1.05	1.2	1.4	1.5	1.5	1.5	2.5
		Min	0.4	0.5	0.65	0.8	1.0	1.1	1.1	1.1	2.1
	Countersunk Head	Max	0.9	1.0	1.15	1.3	1.5	1.7	1.7	1.7	2.8
		Min	0.6	0.7	0.85	1.0	1.2	1.3	1.3	1.3	2.3
d_1	Nom	1.0	1.3	1.6	2.2	2.7	3.0	3.3	3.5	3.5	4.5
R	Nom	4	5	5.5	7	8	8.3	8.5	8.5	8.5	13.3
r	Min	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9	0.9
b		0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
¹⁾ The holes in the rivets are drilled upto the head or for a length 12 mm whichever is less.											

Table 2 Dimensions of Semi-Tubular Rivets

(Clause 4.2)



All dimensions in millimetres.

Nominal Sizes		2	2.5	3	4	5	6	8
d	Max	2.10	2.60	3.10	4.10	5.15	6.15	8.15
	Min	1.90	2.40	2.90	3.90	4.85	5.85	7.85
d_s	Min	1.87	2.37	2.87	3.87	4.82	5.82	7.76
d_k	Oval Head	Max	4.25	5.25	6.25	8.25	9.30	14.30
		Min	4.75	4.75	5.75	7.75	9.20	13.70
	Countersunk Head	Max	4.00	5.00	6.00	8.00	9.50	14.00
		Min	3.75	4.75	5.75	7.52	9.02	13.52
k	Oval Head	Max	0.8	0.9	1.05	1.4	1.5	2.5
		Min	0.4	0.5	0.65	1.0	1.1	2.1
	Countersunk Head	Max	0.9	1.0	1.2	1.5	1.7	2.8
		Min	0.6	0.7	0.9	1.2	1.3	2.3
d_1	Max	1.48	1.88	2.24	2.96	3.72	4.44	6.00
	Min	1.33	1.74	2.20	2.82	3.54	4.26	5.70
l_1	Max	1.70	2.20	2.50	3.10	3.85	4.45	5.65
R	Nom	4	5	5.5	8	8.5	8.5	13.3
r	Min	0.3	0.4	0.5	0.6	0.8	0.9	0.9
b		0.2	0.2	0.2	0.2	0.3	0.3	0.3

Table 3 Diameter — Length Combinations
(Clause 4.3)

LENGTH + 1T 0	NOMINAL DIAMETER d									
	2	2.5	3	3.5	4	4.5	5	5.5	6	8
3										
4										
5										
6										
7										
8										
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10										
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NOTES

- 1 The preferred lengths are between the bold stepped lines.
- 2 Lengths above dotted step lines are to be used as solid drilled tubular rivets.

Bureau of Indian Standards

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc : No. LM 14 (0001).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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